IN THE CLAIMS

Please amend the claims as follows:

Claims 1-49 (Canceled).

Claim 50 (New): A multi-function image processing apparatus comprising:

an image reader configured to read first image data;

an image writer configured to image data onto a transcription sheet; and

an image processing unit configured to process the first image data to second image data and transmit the second image data to the image writer,

wherein the image reader, the image writer, and the image processing unit are configured as independent, replaceable units,

the multi-function image processing apparatus is configured to perform both printing and copying functions, the image reader is configured to read data for copying functions, the image processing unit is configured to perform the image processing for both printing and copying functions, and the image writer is configured to image data on the transcription sheet for both printing and copying functions, and

at least the image processing unit has a SIMD type processor including:

a parallel processing unit configured to perform parallel processing jobs using a plurality of arithmetic units configured to perform arithmetic processing on image data;

a data providing unit configured to provide data to the parallel processing unit;

an instruction providing unit configured to provide a same processing instruction to each of the plurality of arithmetic units;

an input unit configured to input an interruption request to interrupt a first parallel processing job performed by the parallel processing unit in favor of a second parallel processing job;

a decision unit configured to determine a priority between the first parallel processing job and the second parallel processing job;

a suspending unit configured to suspend the first parallel processing job when the decision unit determines that the second parallel processing job has a higher priority than the first parallel processing job; and

a control unit configured to control the data providing unit and the instruction providing unit to provide second data to be arithmetically processed by the parallel processing unit during the second parallel processing job in place of first data to be arithmetically processed by the parallel processing unit during the first parallel processing job, and to provide a same second parallel processing job instruction to each of the arithmetic units.

Claim 51 (New): The multi-function image processing apparatus according to claim 50, further comprising:

an instruction storing unit configured to store instructions.

Claim 52 (New): The multi-function image processing apparatus according to claim 50, further comprising:

a storing unit configured to store suspension information consisting of data and an instruction at a point of time when a parallel processing has been suspended by the suspending unit;

a detecting unit configured to detect whether interruption processing has finished or not; and

a transmission unit configured to transmit the suspension information stored by the storing unit to an original position when the detecting unit has detected a finish of the interruption processing.

Claim 53 (New): The multi-function image processing apparatus according to claim 51, further comprising:

a program counter; and

an accumulator,

wherein the program counter assigns an instruction stored by the instruction storing unit, and each arithmetic unit carries out the arithmetic processing using the accumulator.

Claim 54 (New): The multi-function image processing apparatus according to claim 52, further comprising:

a program counter;

an accumulator;

a first register; and

a data register configured to store data provided by the data providing unit,

wherein the suspension information consists of a program counter value, contents of the accumulator and the first register, and data stored in the data register, at a point of time when a parallel processing has been suspended by the suspending unit.

Claim 55 (New): The multi-function image processing apparatus according to claim 52, wherein:

the storing unit stores various parameter data that are necessary for the arithmetic processing carried out by the arithmetic units.

Claim 56 (New): The multi-function image processing apparatus recited in Claim 50 further comprising:

a facsimile control unit configured to transmit the first data read by the image reader as a facsimile image and receive facsimile image data.

Claim 57 (New): The multi-function image processing apparatus recited in Claim 56 wherein:

the image processing unit is configured to process the facsimile image data to third data and transmit the third data to the image writer, and the image writer is configured to image the third data onto the transcription sheet.

Claim 58 (New): A scanner comprising:

an image reader configured to read first image data; and

an image processing unit configured to process the first image data to second image data,

wherein the image reader and the image processing unit are configured as independent, replaceable units, and

at least the image processing unit has a SIMD type processor including:

a parallel processing unit configured to perform parallel processing jobs using a plurality of arithmetic units configured to perform arithmetic processing on image data;

a data providing unit configured to provide data to the parallel processing unit;

an instruction providing unit configured to provide a same processing instruction to each of the plurality of arithmetic units;

an input unit configured to input an interruption request to interrupt a first parallel processing job performed by the parallel processing unit in favor of a second parallel processing job;

a decision unit configured to determine a priority between the first parallel processing job and the second parallel processing job;

a suspending unit configured to suspend the first parallel processing job when the decision unit determines that the second parallel processing job has a higher priority than the first parallel processing job; and

a control unit configured to control the data providing unit and the instruction providing unit to provide second data to be arithmetically processed by the parallel processing unit during the second parallel processing job in place of first data to be arithmetically processed by the parallel processing unit during the first parallel processing job, and to provide a same second parallel processing job instruction to each of the arithmetic units.

Claim 59 (New): The scanner according to claim 58, further comprising:

an instruction storing unit configured to store instructions.

Claim 60 (New): The scanner according to claim 58, further comprising:

a storing unit configured to store suspension information consisting of data and an instruction at a point of time when a parallel processing has been suspended by the suspending unit;

a detecting unit configured to detect whether interruption processing has finished or not; and

a transmission unit configured to transmit the suspension information stored by the storing unit to an original position when the detecting unit has detected a finish of the interruption processing.

Claim 61 (New): The scanner according to claim 59, further comprising:

a program counter; and

an accumulator,

wherein the program counter assigns an instruction stored by the instruction storing unit, and each arithmetic unit carries out the arithmetic processing using the accumulator.

Claim 62 (New): The scanner according to claim 60, further comprising:

a program counter;

an accumulator;

a first register; and

a data register configured to store data provided by the data providing unit,

wherein the suspension information consists of a program counter value, contents of the accumulator and the first register, and data stored in the data register, at a point of time when a parallel processing has been suspended by the suspending unit.

Claim 63 (New): The scanner according to claim 60, wherein:

the storing unit stores various parameter data that are necessary for the arithmetic processing carried out by the arithmetic units.

Claim 64 (New): A printer comprising:

an image writer configured to image data onto a transcription sheet; and

an image processing unit configured to process first image data to second image data and transmit the second image data to the image writer,

wherein the image writer and the image processing unit are configured as independent, replaceable units, and

at least the image processing unit has a SIMD type processor including:

a parallel processing unit configured to perform parallel processing jobs using a plurality of arithmetic units configured to perform arithmetic processing on image data;

a data providing unit configured to provide data to the parallel processing unit;

an instruction providing unit configured to provide a same processing instruction to each of the plurality of arithmetic units;

an input unit configured to input an interruption request to interrupt a first parallel processing job performed by the parallel processing unit in favor of a second parallel processing job;

a decision unit configured to determine a priority between the first parallel processing job and the second parallel processing job;

a suspending unit configured to suspend the first parallel processing job when the decision unit determines that the second parallel processing job has a higher priority than the first parallel processing job; and

a control unit configured to control the data providing unit and the instruction providing unit to provide second data to be arithmetically processed by the parallel processing unit during the second parallel processing job in place of first data to be arithmetically processed by the parallel processing unit during the first parallel processing job, and to provide a same second parallel processing job instruction to each of the arithmetic units.

Claim 65 (New): The printer according to claim 64, further comprising:

an instruction storing unit configured to store instructions.

Claim 66 (New): The printer according to claim 64, further comprising:

a storing unit configured to store suspension information consisting of data and an instruction at a point of time when a parallel processing has been suspended by the suspending unit;

a detecting unit configured to detect whether interruption processing has finished or not; and

a transmission unit configured to transmit the suspension information stored by the storing unit to an original position when the detecting unit has detected a finish of the interruption processing.

Claim 67 (New): The printer according to claim 65, further comprising:

a program counter; and

an accumulator,

wherein the program counter assigns an instruction stored by the instruction storing unit, and each arithmetic unit carries out the arithmetic processing using the accumulator.

Claim 68 (New): The printer according to claim 66, further comprising:

a program counter;

an accumulator;

a first register; and

a data register configured to store data provided by the data providing unit,

wherein the suspension information consists of a program counter value, contents of the accumulator and the first register, and data stored in the data register, at a point of time when a parallel processing has been suspended by the suspending unit.

Claim 69 (New): The printer according to claim 66, wherein:

the storing unit stores various parameter data that are necessary for the arithmetic processing carried out by the arithmetic units.

Claim 70 (New): A multi-function image processing apparatus comprising:

an image reader configured to read first image data;

an image writer configured to image data onto a transcription sheet;

an image processing unit configured to process the first image data to second image data and transmit the second image data to the image writer; and

a facsimile control unit configured to transmit the first data read by the image reader as a facsimile image and receive facsimile image data,

wherein said multi-function image processing apparatus is configured to operate a plurality of jobs in parallel, said jobs comprising printing, copying, and/or facsimile jobs, the image reader is configured to read data for copying and facsimile functions, the image processing unit is configured to perform the image processing for printing, copying, and facsimile functions, and the image writer is configured to image data on the transcription sheet for printing, copying, and facsimile functions, and

at least the image processing unit has a SIMD type processor including:

a parallel processing unit configured to perform parallel processing jobs using a plurality of arithmetic units configured to perform arithmetic processing on image data;

a data providing unit configured to provide data to the parallel processing unit;

an instruction providing unit configured to provide a same processing instruction to each of the plurality of arithmetic units;

an input unit configured to input an interruption request to interrupt a first parallel processing job performed by the parallel processing unit in favor of a second parallel processing job, said first parallel processing job comprising a printing, copying, or facsimile job and said second parallel processing job comprising a printing, copying, or facsimile job;

a decision unit configured to determine a priority between the first parallel processing job and the second parallel processing job;

a suspending unit configured to suspend the first parallel processing job when the decision unit determines that the second parallel processing job has a higher priority than the first parallel processing job; and

a control unit configured to control the data providing unit and the instruction providing unit to provide second data to be arithmetically processed by the parallel processing unit during the second parallel processing job in place of first data to be arithmetically processed by the parallel processing unit during the first parallel processing job, and to provide a same second parallel processing job instruction to each of the arithmetic units.

Claim 71 (New): The multi-function image processing apparatus according to claim 70, further comprising:

a system controller and a process controller configured to allocate usage of the image reader, the image writer, and the image processing unit among the plurality of jobs operating in parallel.